Jordan Valley Authority

Computer Business Mapping: Inventory and Workshop Computer Systems

Financial Accounting System Program

July 2000

FORWARD

Collaborative Approaches for Resolving Water Issue

Computer Business Mapping Reports:

- Budgeting and Accounting Systems
- Water Management Information System
- √ **Inventory and Workshop Systems**
- Land Information System
- Loan Information System
- Personnel and Payroll Systems

Development Alternative Inc
7250 Woodmont Ave. Suite 200
Bethesda, Maryland 20814

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ACRONYMS

CBJ	Central Bank of Jordan
FA	Fixed Assets
GL	General Ledger
H/W	Hardware
IC	Inventory Control
ICS-R	Inventory Computer System-Reports
JC	Job Costing
MOF	Ministry of Finance
OE	Order Entry
PO	Purchase Order
RDBMS	Relational Database Management System
SGWA	Southern Ghors Wadi Araba
SMS	Erno and Shair Management Systems
S/W	Software
VARCHAR2	Variable Character (database type)
WCS-R	Workshop Computer System-Reports
WIP	Work In Progress

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CHAPTER 1
INTRODUCTION

Scope

The purpose of this report is to document from a software perspective our understanding of the current computer system used for financial accounting at the JVA. A detailed description of accounting and of any related terminology and/or procedures is in the business process mapping documents (i.e., Revenue, Expenditures, Budget and Financial Accounting, Inventory and Fixed Assets, Workshop, and Payroll).

Methodology

The information in this report was gathered from the following sources:

* Interviews with end-users (i.e. employees currently using the applications);
* Documentation prepared by Erno and Shair Management Systems (SMS);
* Discussions with the information technology (IT) staff and with members of the oversight committee; and
* A study of the software in place from a functional and structural perspective.

The FAS program team understands and appreciates that the IT sector is very dynamic, so a cut-off date of 31 March was set for collecting information on the systems. Any changes made after that date will not be reflected in this document.

Background

The Jordan Valley Authority (JVA) has two workshops: the central workshop at Al-Fannosh and the Southern Ghors Wadi Araba (SGWA) workshop.   All JVA vehicles and machinery are monitored and controlled by one of these two shops. Both do all sorts of vehicle repairs and maintenance including mechanical, electrical, body, paint and upholstery work. The workshops receive all newly purchased or donated vehicles, check them, and then deliver them to the users or drivers.

The Al-Fannosh workshop is one of the five directorates of the Northern and Middle Ghors Governate. It provides repair and maintenance services to the whole of the JVA. It was established in 1984 by GTZ and has two stores: the spare parts store and the general items store. The spare parts store receives and stores parts for different types of vehicles and provides the central workshop and the two sub-workshops in the northern and southern divisions with needed supplies. The general items store handles supplies other than spare parts such as construction materials, stationery, tools, and fixed assets. A computerized inventory system has been developed to control and to link the stores.

The SGWA workshop was established more recently. Due to its location, it provides repairs and maintenance for the SGWA Governate only. As it does not have the capacity to perform all kinds of repairs, some are done at Al-Fannosh. In fact, Al-Fannosh provides most repair and maintenance services for the JVA since it is better equipped and nearer to other JVA directorates and sites. The SGWA workshop performs jobs such as the following:

- Maintenance and repair of heavy machinery, trucks, and small vehicles;
- Maintenance and repair of water pumps;
- Repair and maintenance of communication equipment;
- General repairs such as carpentry and painting; and
- Assembly of small items such as pipes, doors and water tanks.

Vouchers are prepared when receiving or issuing a vehicle for maintenance. The workshops maintain a file for each vehicle that includes a copy of the vehicle license, the issue voucher, and the driver's (custodian's) name. Maintenance costs and fuel consumption are reported monthly by each division and are filed in the vehicle file.

Each vehicle has a book which records daily trips, mileage, fuel and oil consumption, and maintenance expenses. The transportation section at each division collects and replaces these books on a monthly basis and files a report for each vehicle that states monthly cost based on the information in the books.

CHAPTER 2
INVENTORY COMPUTER SYSTEM MAIN FUNCTIONS

As mentioned previously, a computerized inventory system has been developed to both control and link the stores at Al-Fannosh. The system does the following:

- Maintains codes
- Maintains item information, characteristics and balance on hand
- Maintains purchase orders and donations
- Controls receipts and issue vouchers
- Generates reports of different types

1. Maintaining Codes

1.1 Type Code Data Entry Form for Items

Each item is assigned a type and group; each type must have a unique code. This information is stored in the **ITEM_TYPE_M** table.

Name	Data Type	Null
ITEM_TYPE	VARCHAR2(20)	NOT
ITEM_DESC	VARCHAR2(60)	

Items in the central workshop stores are classified into types according to vehicle model and manufacturer such as:

Type Code	Type Description
1	NISSAN PATROL
2	ISUZU

1.2 Group Code Data Entry Form for Items

Each item is assigned a type and group; each group must have a unique code. This information is stored in the **ITEM_GROUP_M** table.

Name	Data Type	Null
ITEM_TYPE	VARCHAR2(20)	
ITEM_GROUP	NUMBER(20)	
GROUP_NAME	VARCHAR2(60)	

Items are classified into groups by type, such as:

Type Code	Type Description	Group Code	Group Description
1	NISSAN PATROL	1	NC 84 ED 33 EE
1	NISSAN PATROL	2	NC 84 ED 33 EN
1	NISSAN PATROL	3	NC 84 ED 33 B
2	ISUZU	1	IS 82 TRUBER ST
2	ISUZU	2	IS 82 TRUBER EX

1.3 Store Code Data Entry Form

Store information such as store code, description and location is entered in the **STORE_M** table.

Name	Data Type	Null
STORE_CODE	VARCHAR2(20)	NOT
STORE_NAME	VARCHAR2(60)	
STORE_LOCATION	VARCHAR2(60)	

The spare parts and general items stores at Al-Fannoush are stored in the table as:

Store Code	Store Description	Location
1	Spare parts	Fannosh
2	General store	Fannosh

1.4 Supplier Information Data Entry Form

نظام تحكم المواد في المستودعات
صيانة رموز الموردين

P

البلد	رقم الهاتف	عنوان المورد	اسم المورد	رمز المورد

خروج | حذف | مسح | تعليل | | استعلام | ما لية | | | صيانة

Supplier information such as code, name, address, telephone and country are stored in the **SUPPLIER_M** table. Each supplier must have a unique code.

Name	Data Type	Null
SUPPLIER_CODE	VARCHAR2(20)	NOT
SUPPLIER_NAME	VARCHAR2(60)	
SUPPLIER_ADD	VARCHAR2(60)	
SUPPLIER_TEL	VARCHAR2(20)	
SUPPLIER_COUNTRY	VARCHAR2(30)	

1.5 Type Code Data Entry for Expired Items

نظام تحكم المواد في المستودعات
صيانة رموز المواد الخردة

P

الوصف	رمز المردة

خروج | حذف | مسح | تعليل | | استعلام | ما لية | | | صيانة

6

An item must have a reason for expiration. The reasons are classified into types, and each type must have a unique code. The information is stored in the **EXP_ITEM_M** table.

Name	Data Type	Null
EXP_CODE	VARCHAR2(20)	NOT
EXP_DESC	VARCHAR2(60)	

2. Maintaining Item Information and Balance On Hand

2.1 Item Information and Characteristics Data Entry Form

Item information and characteristics such as manufacturer's number, related subsidiary items, and minimum and maximum stock levels are entered on this form. Spare parts and items in the general store are coded and stored in the **STOCK_ITEM_CHAR** table. This table maintains information as follows:

Name	Data Type	Null
STOCK_ITEM_TYPE	NUMBER(3)	
STOCK_ITEM_GROUP	VARCHAR2(3)	
STOCK_ITEM_NO	NUMBER(5)	
STOCK_ITEM_MAKE	VARCHAR2(20)	
STOCK_ITEM_DESC	VARCHAR2(60)	
MANUFACTURE_PART_NO	VARCHAR2(20)	
REPLACED_BY_PART_NO	VARCHAR2(20)	
REPLACED_FOR_PART_NO	VARCHAR2(20)	
STOCK_ITEM_UNIT	VARCHAR2(20)	
STOCK_ITEM_PRICE	NUMBER(8,3)	
MIN_STOCK_LEVEL	NUMBER(5)	
MAX_STOCK_LEVEL	NUMBER(5)	
STOCK_LEAD_TIME	NUMBER(3)	
ITEM_BUFFER_STOCK	NUMBER(4)	

Name	Data Type	Null
ITEM_SCRAP_FLAG	NUMBER(1)	

Each item in the store has an automatically generated number related to item type and group such as:

Item number	Type code	Group code	Item description
1	1	1	AUTOMATIC STARTER
2	1	1	LOCK VALVE
1	1	2	PIPE EXHAUST
1	2	1	REGULATOR
2	2	1	DISTRIBUTOR
1	2	2	BEARING

2.2 Item Information and Balance On Hand Data Entry Form

The **STOCK_ITEM_BALANCE** table records items by store, relevant codes, balance on hand, location in the store and last date of issue or receipt as follows:

Name	Data Type	Null
STORE_CODE	NUMBER(2)	NOT
STOCK_ITEM_TYPE	NUMBER(4)	NOT
STOCK_ITEM_GROUP	VARCHAR2(3)	
STOCK_ITEM_NO	VARCHAR2(20)	NOT
ITEM_SHELF_NO	VARCHAR2(5)	
ITEM_BALANCE	NUMBER(5)	NOT
LAST_ISSUE	DATE	
LAST_RECEIPT	DATE	

3. Maintaining Purchase Orders and Donations

3.1 Supply Request Data Entry Form

Filling out a "supply request form" is the first step in issuing supplies from stores. If the items are available, the requesting department receives the supplies via a "supply issue voucher." If the requested items are not available, the storekeeper signs the request and returns it to the requesting department. This data entry form deals with master /detail tables composed of **DON_MAS** and **DON_DET**. The following description is of the **DON_MAS** table.

Name	Data Type	Null
PUR_R_NO	VARCHAR2(20)	
R_DATE	DATE	
R_TYPE	VARCHAR2(30)	
AMM_NO	VARCHAR2(20)	
AMM_DATE	DATE	
USE_RES	VARCHAR2(60)	
VEHICLE_NO	NUMBER(6)	

Items listed in the supply request form are stored in the **DON_DET** table.

Name	Data Type	Null
PUR_R_NO	VARCHAR2(20)	
STOCK_ITEM_TYPE	VARCHAR2(20)	
MANUFACTURE_PART_NO	VARCHAR2(20)	
QTY	NUMBER(12,3)	
CAN_SIGN	NUMBER(1)	
VEHICLE_NO	NUMBER(6)	
AMM_NO	VARCHAR2(20)	

3.2 Purchase Order Data Entry Form

This is a master / detail form composed of **PURCHASE_MAS** and **PURCHASE_DET** tables. The information on the purchase order is stored in the **PURCHASE_MAS** table as follows:

Name	Data Type	Null
PUR_O_NO	VARCHAR2(20)	NOT
O_DATE	DATE	
AMM_NO	VARCHAR2(20)	
AMM_DATE	DATE	
PUR_R_NO	VARCHAR2(20)	NOT
TEN_NO	VARCHAR2(20)	
PUR_WAY	NUMBER(1)	

Purchased items related to a purchase order are stored in the **PURCHASE_DET** table.

Name	Data Type	Null
PUR_O_NO	VARCHAR2(20)	
PUR_R_NO	VARCHAR2(20)	
STOCK_ITEM_TYPE	VARCHAR2(20)	
MANUFACTURE_PART_NO	VARCHAR2(20)	
SUPPLIER_CODE	VARCHAR2(20)	
P_QTY	NUMBER(12,3)	
JOR_PRICE	NUMBER(12,3)	

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4. Control of Receipt and Issue Vouchers

4.1 Receipt Voucher Data Entry Form

The storekeeper has the authority to receive supplies with a value of less than JD 500. If the value is above JD 500, a receiving committee receives the supplies and prepares a "supply receipt note." The storekeeper receives items in the following three ways:

- With a supply receipt note;
- From other JVA stores;
- From divisions returning supplies regardless of their value.

Receipts are tracked on a master / detail data entry form composed of **MATERIAL_REC_M** and **MATERIAL_REC_D** tables. From this form the storekeeper prepares a receipt voucher for the items. The information on the receipt voucher is stored in the **MATERIAL_REC_M** table.

Name	Data Type	Null
RECEIPT_VOUCHER_NO	VARCHAR2(7)	
RECEIPT_VOUCHER_DATE	DATE	
VOUCHER_TYPE	NUMBER(1)	
INVOICE_NO	NUMBER(6)	
INVOICE_DATE	DATE	
PUR_REQ_NO	VARCHAR2(20)	
SUPPLIER_NO	NUMBER(6)	

The information on items received is stored in the **MATERIAL_REC_D** table.

Name	Data Type	Null
RECEIPT_VOUCHER_NO	VARCHAR2(7)	
STORE_CODE	NUMBER(2)	
STOCK_ITEM_TYPE	VARCHAR2(20)	
MANUFACTURE_PART_NO	VARCHAR2(20)	

Name	Data Type	Null
QUANTITY_RECEIVED	NUMBER(4)	
ITEM_PRICE	NUMBER(12,3)	
ITEM_SHELF_NO	NUMBER(2)	

4.2 Issue Voucher Data Entry Form

As mentioned previously, when the storekeeper receives a supply request from a department, he checks to see if the items are available. If they are, the storekeeper prepares a supply issue voucher. These are recorded on a master / detail form composed of **MATERIAL_REQ_M** and **MATERIAL_REQ_D** tables. Information on the issue voucher is stored in the **MATERIAL_REQ_M** table as follows:

Name	Data Type	Null
ISSUE_VOUCHER_NO	VARCHAR2(7)	
ISSUE_VOUCHER_DATE	DATE	
VOUCHER_TYPE	NUMBER(1)	
REQUISITES_NO	NUMBER(7)	
REQUISITES_DATE	DATE	
EMPLOYEE_NO	NUMBER(5)	
PURPOSE	VARCHAR2(40)	
VEHICLE_NO	NUMBER(6)	
JOB_CARD_NO	NUMBER(6)	

Items issued that are related to the issue voucher are stored in the **MATERIAL_REQ_D** table.

Name	Data Type	Null
ISSUE_VOUCHER_NO	VARCHAR2(7)	
STORE_NO	NUMBER(2)	
ITEM_TYPE	NUMBER(3)	
MANUFACTURE_PART_NO	VARCHAR2(20)	

QUANTITY_RECEIVED	NUMBER(4)	
ITEM_PRICE	NUMBER(6,3)	
ITEM_SHELF_NO	NUMBER(2)	
USE_FLAG	VARCHAR2(1)	

5. Reports

The following reports are currently generated by the system. (A printout of all of them is in Annex A.) For reference purposes only we have labeled each as an **I**nventory **C**omputer **S**ystem-**R**eport and have numbered them sequentially.

5.1 Supply Request (ICS-R1)

The report lists all supply request forms and all items related to each form during the designated period. The information displayed is the following:

- Header: request number, request date, order type, Amman number, Amman date and usage;
- Details: item type, type description, parts number, item description, unit and quantity; and
- Footer: total count of items for each request.

5.2 Purchase Orders (ICS-R2)

This report lists all purchase orders and items related to each order in the designated period.   The following information is displayed.

- Header: purchase order, purchase date, order type, Amman number, Amman date, supply request number, bid number (if one exists);
- Details: item type, type description, part number, item description, unit, supplier code, supplier name, quantity purchased, unit price and total price; and
- Footer: total count of items per order, grand total price per order.

5.3 Receipt Vouchers (ICS-R3)

The information on the vouchers and on items entered into stores including units and quantity in the designated period is listed as follows:

- Header: receipt voucher, receipt type, voucher date, supplier invoice number, invoice date, purchase order number, supplier code and name;
- Details: store number, item type, part number, item description, unit, quantity, unit price, total price and shelf number; and
- Footer: grand total per receipt voucher.

5.4 Issue Vouchers (ICS-R4)

Issue vouchers and items related to them in the designated period are listed as follows in this report:

- Header: issue voucher, voucher date, voucher type, supply request number, custodian/employee code and name, job card number, vehicle number and usage;
- Details: store number, item type, part number, item description, quantity, unit price, total price and shelf number; and
- Footer: grand total per issue voucher.

5.5 Items Received (ICS-R5)

All items and vouchers received within the period are sorted according to voucher date as follows:

- Header: voucher date;
- Details: store number, item type, parts number, item description and quantity; and
- Footer: a chart containing quantity received versus item description.

5.6 Items Issued (ICS-R6)

All items and vouchers issued within period are sorted according to voucher date as follows:

- Header: voucher date;
- Details: store number, item type, part number, item description and quantity; and
- Footer: a chart containing quantity issued versus item description.

5.7 Items Issued According to Type (ICS-R7)

This report lists all vouchers issued for specific items within the period as follows:

- Header: issue voucher date, item type, type description, part number, item description; and
- Details: voucher type, issue voucher number, and quantity issued.

5.8 Items Received According to Type (ICS-R8)

All receipt vouchers for specific items received within the period are listed as follows:

- Header: receipt voucher date, item type, type description, part number, item description; and
- Details: receipt voucher number and quantity received.

CHAPTER 3
INVENTORY FUNCTIONS AND RELATED DATABASE

Table 3.1 lists the system functions and programs.

Table 3.1
Inventory System Functions

Function Description	Program Name
Item type codes	ITEM_TYPE_M
Item group codes	ITEM_GROUP_M
Store codes	STORE_M
Supplier information	SUPPLIER_M
Expired item type codes	EXP_ITEM_M
Item information and characteristics	STORE_ITEM_CHAR
Item in store information and balances	STOCK_ITEM_BALANCES
Supply request forms	DONATION
Purchase orders	PUR
Receipt vouchers	MATERIAL_RECEIPT
Issue vouchers	MATERIAL_REQUESTION

Table 3.2 summarizes the information contained in the system.

Table 3.2
Data Description in the Computerized Inventory System

Program Name	Basic Table(s)
ITEM_TYPE_M	ITEM_TYPE_M
ITEM_GROUP_M	ITEM_GROUP_M
STORE_M	STORE_M
SUPPLIER_M	SUPPLIER_M
EXP_ITEM_M	EXP_ITEM_M
STORE_ITEM_CHAR	STORE_ITEM_CHAR
STOCK_ITEM_BALANCES	STOCK_ITEM_BALANCES
DONATION	DON_MAS, DON_DET
PUR	PURCHASE_MAS, PURCHASE_DET
MATERIAL_RECEIPT	MATERIAL_REC_M, MATERIAL_REC_D
MATERIAL_REQUESTION	MATERIAL_REQ_M, MATERIAL_REQ_D

Table 3.3 summarizes reports generated by the system.

Table 3.3
Reports Generated by the Computerized Inventory System

Report Description	Report Name
Request for purchasing order	REP_DONATION_MON
Purchase orders	REP_PUR
Receipt vouchers	REP_MATERIAL_RECEIPT
Issue vouchers	REQUESTED
Items received	REP_MATERIAL_IN
Items issued	REP_MATERIAL_OUT
Items issued according to type	REP_MATERIAL_OUT_ITEM
Items received according to type	REP_MATERIAL_IN_ITEM

Figure 3.1 below describes how data flows in the system.

Figure 3.1
Inventory System Data Flow

Jordan Valley Authority
Inventory System Data Flow
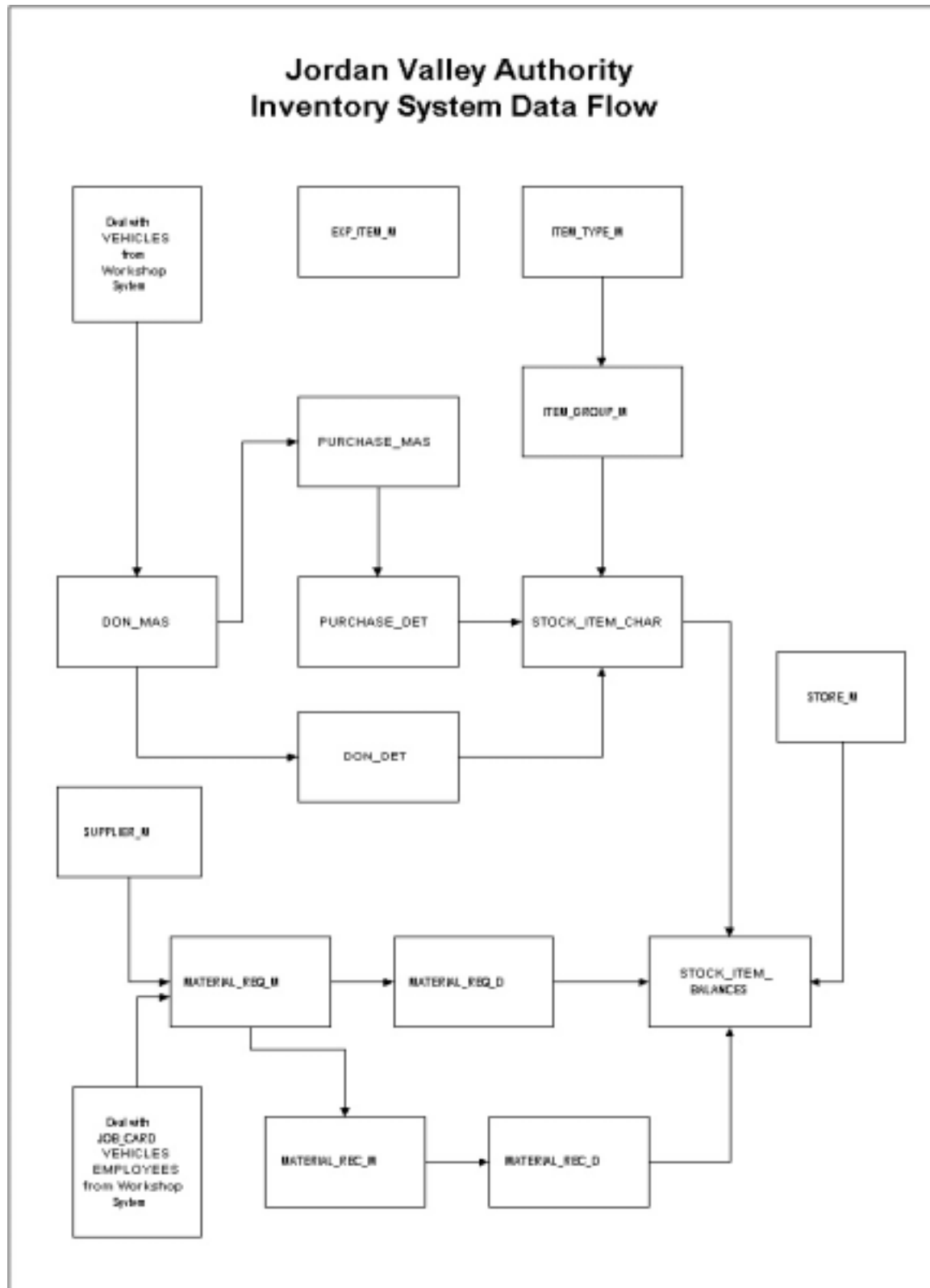
CHAPTER 4
WORKSHOP COMPUTER SYSTEM MAIN FUNCTIONS

The workshop computer system does the following:

- Maintains codes
- Stores vehicle information
- Stores job cards and requests for repairs
- Maintains a costing module
- Generates various reports

1. Maintaining Codes

The JVA is organized into seven administrative units called governates, each of which is divided into various directorates. Each directorate is divided into departments, and each department has sections.

1.1 Directorate Codes Data Entry Form

Each directorate must have a unique code. The **DIRECTORATE_CODE_TABLE** holds information about the directorates as follows:

Name	Data Type	Null
JVA_DIRECTORATE_CODE	VARCHAR2(3)	NOT
JVA_DIRECTORATE_NAME	VARCHAR2(40)	NOT

Below is an example of a directorate information table.

Code	Directorate Name
A	Administration
B	Karameh Dam
1	Garage
2	Oil

1.2 Department Code Data Entry Form

Each department must have a unique code. The **DEPARTMENT_CODE_TABLE** records information as follows:

Name	Data Type	Null
JVA_DIRECTORATE_CODE	VARCHAR2(3)	NOT
DEPARTMENT_CODE	NUMBER(2)	NOT
DEPARTMENT_NAME	VARCHAR2(40)	NOT

For example:

Code	Directorate Name	Dep. Code	Department Description
A	Administration	1	Administration
B	Karameh Dam	1	Karameh Dam
H	Workshop	5	Workshops and Stores

1.3 Section Code Data Entry Form

نظام ادارة المشاغل المركزية
صيانة رموز الاقسام

نوع القسم	اسم القسم	رمز القسم	اسم المديرية	رمز المديرية	اسم الادارة	رمز الادارة

خروج   ساوئ   مسح   Delete   استعلام   بداية   >   <   نهاية

Section information is entered in the **SECTION_CODE_TABLE** as follows:

Name	Data Type	Null
JVA_DIRECTORATE_CODE	VARCHAR2(3)	NOT
DEPARTMENT_CODE	NUMBER(2)	NOT
SECTION_CODE	NUMBER(2)	NOT
SECTION_NAME	VARCHAR2(40)	NOT
SECTION_TYPE	NUMBER(1)	

1.4 Repair Code Data Entry Form

نظام ادارة المشاغل المركزية
صيانة رموز الاصلاح

كلفة الساعة	ساعات العمل	الوصف	رمز الاصلاح	رمز القسم

اسم القسم

خروج   ساوئ   مسح   Delete   استعلام   ابعاد   >   <   ابتداء

Each repair that the workshop can do must have a unique code. This form maintains repair information and stores data in the **REPAIR_CODE_TABLE** as follows:

Name	Data Type	Null
REPAIR_CODE	NUMBER(10)	NOT
REPAIR_DESCRIPTION	VARCHAR2(40)	NOT
STD_WORKING_HRS	NUMBER(4,2)	NOT
STD_PRICE	NUMBER(6,3)	NOT
SECTION_CODE	NUMBER(2)	

1.5 Fuel Type Code Data Entry Form

This form maintains all kinds of fuel types and fuel type information in the **FUEL_TYPE_CODE_TABLE** as follows:

Name	Data Type	Null
FUEL_TYPE_CODE	NUMBER(1)	NOT
FUEL_TYPE_NAME	VARCHAR2(40)	NOT
FUEL_UNIT	VARCHAR2(4)	NOT
FUEL_UNIT_PRICE	NUMBER(5,3)	NOT

1.6 Oil Grade Code Data Entry Form

نظام ادارة المشاغل المركزية
صيانة رموز أنواع الزيوت

سعر الوحدة	الوحدة	وصف درجة الزيت	رمز درجة الزيت

خروج | | محح | | | استعلام | | | |

This form maintains all kinds of oil grades and stores oil grade information in the **OIL_GRADE_CODE_TABLE** as follows:

Name	Data Type	Null
OIL_GRADE_CODE	NUMBER(1)	NOT
OIL_GRADE_NAME	VARCHAR2(40)	NOT
OIL_UNIT	VARCHAR2(4)	NOT
OIL_UNIT_PRICE	NUMBER(4,2)	NOT

1.7 Lubricant Grade Code Form

نظام ادارة المشاغل المركزية
صيانة رموز درجة الشحمة

سعر الوحدة	الوحدة	وصف درجة الشحمة	رمز درجة الشحمة

خروج | | محح | | | استعلام | | | |

This form maintains all types of lubricant grades and stores information about lubricants in the **LUBRICANT_GRADE_CODE_TABLE** as follows:

Name	Data Type	Null
LUBRICANT_GRADE_CODE	NUMBER(1)	NOT
LUBRICANT_GRADE_NAME	VARCHAR2(40)	NOT
LUBRICANT_UNIT	VARCHAR2(4)	NOT
LUBRICANT_UNIT_PRICE	NUMBER(4,2)	NOT

1.8 General Characteristics Form

This form maintains general characteristics of heavy machinery and other equipment owned by the JVA and stores information in the **PLANT_CHAR** table as follows.

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
JVA_DIRECTORATE_CODE	VARCHAR2(3)	
PLANT_REG_NO	VARCHAR2(40)	
ORDER_NO	NUMBER(7)	
ORDER_DATE_D	NUMBER(2)	
ORDER_DATE_M	NUMBER(2)	
ORDER_DATE_Y	NUMBER(4)	
ORDER_FROM	VARCHAR2(40)	
PLANT_STATUS	NUMBER(1)	
DELIVERY_DATE_D	NUMBER(2)	
DELIVERY_DATE_M	NUMBER(2)	
DELIVERY_DATE_Y	NUMBER(4)	
COMMISSION_DATE_D	NUMBER(2)	
COMMISSION_DATE_M	NUMBER(2)	
COMMISSION_DATE_Y	NUMBER(4)	
PLANT_LIFE	NUMBER(2)	
PLANT_MAKE	VARCHAR2(40)	
PLANT_MODEL	VARCHAR2(40)	
PLANT_CHASSIS_NO	VARCHAR2(40)	
PLANT_TYPE	VARCHAR2(40)	
PLANT_MAKE_YEAR	NUMBER(4)	

Name	Data Type	Null
PLANT_PRICE	NUMBER(7)	
PLANT_WEIGHT	NUMBER(4)	
FRONT_TYRE_SIZE	VARCHAR2(10)	
FRONT_TYRE_PLY	NUMBER(1)	
FRONT_TYRE_PRESSURE	NUMBER(2)	
REAR_TYRE_SIZE	VARCHAR2(10)	
REAR_TYRE_PLY	NUMBER(1)	
REAR_TYRE_PRESSURE	NUMBER(2)	

1.9 Engine Characteristics Data Entry Form

This form tracks engines and their characteristics in the **PLANT_ENGINE_CHAR** table as follows.

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
ENG_MAKE	VARCHAR2(40)	
ENG_FUEL_TYPE	NUMBER(1)	
ENG_COOLING_SYS	VARCHAR2(40)	
ENG_SERIAL_NO	VARCHAR2(40)	
ENG_CYLINDER_NO	NUMBER(2)	
ENG_PUMP_CAPP	NUMBER(3)	
ENG_FUEL_CAPP	NUMBER(5)	
ENG_FUEL_CONSUMPTION	NUMBER(5)	
ENG_OIL_GRADE	NUMBER(2)	
ENG_LUB_GRADE	NUMBER(2)	
ENG_BELT_SIZE	NUMBER(3)	

1.10 Starter Characteristics Data Entry Form

This form maintains engine starter types and stores this information in the **PLANT_ STARTER_CHAR** table as follows:

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
ENG_STARTER_TYPE	VARCHAR2(40)	
ENG_STARTER_SER_NO	VARCHAR2(40)	

1.11 Battery Characteristics Data Entry Form

For communication and general repair purposes, information about batteries used by the JVA can be entered onto this form and stored in the **PLANT_BATTERY_CHAR** table.

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
BATTERY_TYPE	VARCHAR2(40)	

Name	Data Type	Null
BATTERY_VOLTAGE	NUMBER(2)	
BATTERY_LENGTH	NUMBER(3)	
BATTERY_WIDTH	NUMBER(2)	
BATTERY_HEIGHT	NUMBER(2)	

1.12 Compressor Characteristics Data Entry Form

This form maintains information about engine compressors and holds data in the
PLANT_COMPRESSOR_CHAR table as follows:

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
ENG_COMPRESSOR_MAKE	VARCHAR2(40)	
ENG_COMPRESSOR_TYPE	VARCHAR2(40)	
ENG_COMPRESSOR_NO	VARCHAR2(40)	

1.13 Alternator Characteristics Data Entry Form

This form tracks all kinds of alternator types and stores information in the **PLANT_ALTERNATOR_CHAR** table as follows:

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
ALTERNATOR_MAKE	VARCHAR2(40)	
ALTERNATOR_TYPE	VARCHAR2(40)	
ALTERNATOR_NO	VARCHAR2(40)	

1.14 Transmission Characteristics Data Entry Form

The **PLANT_TRANSMISSION_CHAR** table is as follows:

Name	Data Type	Null
PLANT_NO	NUMBER(6)	

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Name	Data Type	Null
TRANS_MAKE	VARCHAR2(40)	
TRANS_TYPE	VARCHAR2(40)	
TRANS_SERIAL_NO	VARCHAR2(40)	
TRANS_PUMP_CAPP	NUMBER(5)	
TRANS_LUB_GRADE	NUMBER(1)	

1.15 Generator Characteristics Data Entry Form

Electrical generator information such as type, serial number, rating, HZ and other data from the manufacturer is stored in the **PLANT_GENERATOR_CHAR** table.

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
GENERATOR_MAKE	VARCHAR2(40)	
GENERATOR_TYPE	VARCHAR2(40)	
GENERATOR_SERIAL_NO	VARCHAR2(40)	
GENERATOR_RATING	NUMBER(2)	
GENERATOR_RPM	NUMBER(5)	
GENERATOR_HZ	NUMBER(4)	

1.16 Pump Characteristics Data Entry Form

The type, serial number, rating and other information from the manufacturer is stored in the **PLANT_PUMP_CHAR** table as follows.

Name	Data Type	Null
PLANT_NO	NUMBER(6)	
PUMP_MAKE	VARCHAR2(40)	
PUMP_TYPE	VARCHAR2(40)	
PUMP_SERIAL_NO	VARCHAR2(40)	
PUMP_RATING	NUMBER(2)	
PUMP_DISCHARGE	NUMBER(5)	
PUMP_HP	NUMBER(5)	
PUMP_TOTAL_HEAD	NUMBER(5)	
PUMP_RPM	NUMBER(5)	

1.17 Employee Information Form

This form is for employees at the Al-Fannosh workshops and is useful for job costing reports. It is stored in the **EMPLOYEE_CHAR** table.

Name	Data Type	Null
JVA_DIRECTORATE_CODE	VARCHAR2(3)	NOT
DEPARTMENT_CODE	NUMBER(2)	NOT
SECTION_CODE	NUMBER(2)	NOT
EMPLOYEE_NO	NUMBER(4)	NOT
EMPLOYEE_NAME	VARCHAR2(40)	NOT
MONTHLY_WAGES	NUMBER(7,3)	NOT
JOB_TYPE	NUMBER(1)	NOT
LAST_UPDATED	DATE	
OFFICIAL_HOURS	NUMBER(4)	

1.18 Fixed Asset Information Data Entry Form

Assets at Al-Fannosh are entered and stored in the **ASSET_CHAR** table as follows:

Name	Data Type	Null
ASSET_CODE	NUMBER(4)	NOT
ASSET_DESCRIPTION	VARCHAR2(40)	NOT
DEPARTMENT_CODE	NUMBER(2)	NOT
SECTION_CODE	NUMBER(2)	NOT
ASSET_TYPE	NUMBER(1)	NOT
ASSET_VALUE	NUMBER(7,3)	NOT
ASSET_LOCATION	VARCHAR2(20)	
ACQUISITION_DATE_D	NUMBER(2)	NOT
ACQUISITION_DATE_M	NUMBER(2)	NOT
ACQUISITION_DATE_Y	NUMBER(4)	NOT
DEPRECIATE_FLAG	NUMBER(1)	NOT
DEPRECIATE_DATE_D	NUMBER(2)	NOT
DEPRECIATE_DATE_M	NUMBER(2)	NOT

Name	Data Type	Null
DEPRECIATE_DATE_Y	NUMBER(4)	NOT
ASSET_LIFE	NUMBER(2)	NOT

2. Maintaining Vehicle Information

2.1 Vehicle Characteristics Data Entry Form

Information about small vehicles and trucks including model, year, engine number, chassis number, vehicle value and purchase date is recorded and updated on this form. The **VEHICLE_CHAR** table maintains the information as follows:

Name	Data Type	Null
VEHICLE_NO	NUMBER(6)	NOT
VEHICLE_MAKE	VARCHAR2(40)	NOT
VEHICLE_MODEL	VARCHAR2(40)	NOT
VEHICLE_MAKE_YEAR	NUMBER(4)	NOT
CHASSIS_NO	VARCHAR2(20)	NOT
ENGINE_NO	VARCHAR2(20)	NOT
VEHICLE_VALUE	NUMBER(5)	NOT
REGISTRATION_VALUE	NUMBER(5)	NOT
DELIVERY_DATE_D	NUMBER(2)	NOT
DELIVERY_DATE_M	NUMBER(2)	NOT
DELIVERY_DATE_Y	NUMBER(4)	NOT
JVA_DIRECTORATE_CODE	VARCHAR2(3)	NOT
VEHICLE_COLOUR	VARCHAR2(15)	
LUBRICANT_GRADE	NUMBER(2)	
OIL_GRADE	NUMBER(2)	
FUEL_TYPE	NUMBER(1)	
ENGINE_CAPACITY	NUMBER(4)	
NO_OF_PASSENGERS	NUMBER(2)	
MILEAGE_START	NUMBER(6)	

3. Maintaining Job Cards and Vehicle Repairs

3.1 Repair Request Data Entry Form

The directorate fills out a "request for repairs" form and sends it to the workshop. This information is stored in the **CW_REPAIR_REQUESTS** table as follows:

Name	Data Type	Null
REPAIR_REQUEST_NO	NUMBER(6)	NOT
REPAIR_REQUEST_D	NUMBER(2)	NOT
REPAIR_REQUEST_M	NUMBER(2)	NOT
REPAIR_REQUEST_Y	NUMBER(4)	NOT
SUBJECT_IDENT	NUMBER(1)	NOT
JVA_DIRECTORATE_CODE	VARCHAR2(3)	
SUBJECT_NO	NUMBER(6)	
REPAIR_CODE	NUMBER(10)	NOT
REPAIR_TYPE	NUMBER(1)	

When workshop employees receive a request for repairs, they assign it a job card. The card can be accessed on the computer from this form by pressing the "CARD" button. This is discussed in more detail in the "Job Card Data Entry Form".

3.2 Request for Specialized Repairs Data Entry Form

Such repairs are recorded and updated in the **SPECIALISED_REPAIR_REQUESTS** table as follows:

Name	Data Type	Null
REPAIR_REQUEST_NO	NUMBER(5)	NOT
REPAIR_REQUEST_D	NUMBER(2)	NOT
REPAIR_REQUEST_M	NUMBER(2)	NOT
REPAIR_REQUEST_Y	NUMBER(4)	NOT
JVA_DIRECTORATE_CODE	VARCHAR2(3)	
REPAIR_SERIAL_NO	NUMBER(4)	
REPAIR_DESCRIPTION	VARCHAR2(40)	
REPAIR_TYPE	NUMBER(1)	
REPAIR_SECTION_CODE	NUMBER(2)	

3.3 Job Card Data Entry and Job Card Query Forms

Information on the cards including the starting and ending dates of the work is stored in **CW_JOB_CARDS** table as follows. Other work on a vehicle (e.g., changing oil) and any materials issued for repairs for that vehicle are recorded in the vehicle book and can be accessed by calling up the CW_JOB_CARDS_OIL form.

Name	Data Type	Null
JOB_CARD_NO	NUMBER(6)	NOT
REPAIR_REQUEST_NO	NUMBER(6)	NOT
SUBJECT_NO	NUMBER(6)	
REPAIR_SECTION_CODE	NUMBER(2)	NOT
REPAIR_CODE	NUMBER(10)	NOT
JOB_CARD_D	NUMBER(2)	NOT
JOB_CARD_M	NUMBER(2)	NOT
JOB_CARD_Y	NUMBER(4)	NOT
JOB_END_D	NUMBER(2)	NOT
JOB_END_M	NUMBER(2)	NOT
JOB_END_Y	NUMBER(4)	NOT
JVA_DIRECTORATE_CODE	VARCHAR2(3)	
EMPLOYEE_NO	NUMBER(4)	
INHOUSE_SERVICE_HRS	NUMBER(2)	
FIELD_SERVICE_HRS	NUMBER(2)	

Information on lubrication and oil changes for a vehicle is stored in the **JOB_CARD_OIL_LUBS** table as follows:

Name	Data Type	Null
JOB_CARD_NO	NUMBER(7)	
SUBJECT_NO	NUMBER(6)	
JVA_DIRECTORATE_CODE	VARCHAR2(3)	
JOB_END_D	NUMBER(2)	
JOB_END_M	NUMBER(2)	
JOB_END_Y	NUMBER(4)	
LUBRICANT_GRADE	NUMBER(2)	
LUBRICANT_QTY	NUMBER(6,3)	
LUBRICANT_PRICE	NUMBER(6,3)	
OIL_GRADE	NUMBER(2)	
OIL_QTY	NUMBER(6,3)	
OIL_PRICE	NUMBER(6,3)	
MILEAGE	NUMBER(6)	

Information on materials issued to repair a vehicle is stored in **CW_JOB_CARD_MATERIALS** table as follows:

Name	Data Type	Null
JOB_CARD_NO	NUMBER(7)	
SUBJECT_NO	NUMBER(6)	
REPAIR_SECTION_CODE	NUMBER(2)	
REPAIR_CODE	NUMBER(4)	
JVA_DIRECTORATE_CODE	VARCHAR2(3)	

Name	Data Type	Null
JOB_END_D	NUMBER(2)	
JOB_END_M	NUMBER(2)	
JOB_END_Y	NUMBER(4)	
STOCK_ITEM_TYPE	NUMBER(4)	
STOCK_ITEM_GROUP	NUMBER(3)	
STOCK_ITEM_NO	VARCHAR2(20)	
STOCK_ITEM_PRICE	NUMBER(8,3)	
ITEM_QTY	NUMBER(3)	
VOUCHER_NO	VARCHAR2(7)	
FLAG_USE_MATERIAL	VARCHAR2(1)	

The following two tables are not used in the system:

CW_JOB_CARD_LUBS table

Name	Data Type	Null
JOB_CARD_NO	NUMBER(7)	NOT
SUBJECT_NO	NUMBER(6)	
JVA_DIRECTORATE_CODE	VARCHAR2(3)	
JOB_END_D	NUMBER(2)	NOT
JOB_END_M	NUMBER(2)	NOT
JOB_END_Y	NUMBER(4)	NOT
LUBRICANT_GRADE	NUMBER(2)	
LUBRICANT_QTY	NUMBER(4,2)	
LUBRICANT_PRICE	NUMBER(6,3)	
MILEAGE	NUMBER(6)	

CW_JOB_CARD_OILS table

Name	Data Type	Null
JOB_CARD_NO	NUMBER(7)	NOT
SUBJECT_NO	NUMBER(6)	
JVA_DIRECTORATE_CODE	VARCHAR2(3)	
JOB_END_D	NUMBER(2)	NOT
JOB_END_M	NUMBER(2)	NOT
JOB_END_Y	NUMBER(4)	NOT
OIL_GRADE	NUMBER(2)	
OIL_QTY	NUMBER(3,1)	
OIL_PRICE	NUMBER(6,3)	
MILEAGE	NUMBER(6)	

To provide statistics on vehicles and job cards, each transaction is logged as summary information in the monthly vehicle log (MONTHLY_VEHICLE_LOG) or the monthly machinery log (MONTHLY_PLANT_LOG) and is then added to the actual monthly working hours for the section doing the repairs (MONTHLY SECTION_WORK_HRS).

4. Maintaining Cost Modules

4.1 Section Rates Data Entry Form

The user can specify the month, number of working days in that month, number of Fridays, number of holidays, number of working hours per day (in-house, field) and the overhead cost for JVA sections. The information is recorded in the **SECTION_ RATES** table.

Name	Data Type	Null
REPORT_PERIOD_M	NUMBER(2)	NOT
REPORT_PERIOD_Y	NUMBER(4)	NOT
DEPARTMENT_CODE	NUMBER(1)	
SECTION_CODE	NUMBER(2)	
SECTION_OVERHEAD	NUMBER(3)	
INHOUSE_HOUR_RATE	NUMBER(2)	
FIELD_HOUR_RATE	NUMBER(2)	

4.2 Annual Operating Costs for Vehicles Data Entry Form

نظام ادارة المشاغل المركزية
كلفة التشغيل السنوي للسيارات

فائدة رأس المال	قيمة الاستهلاك	مبلغ التأمين	قيمة الترخيص	تاريخ الترخيص	رقم السيارة	السنة

خروج | اضافة | مسح | حذف   استعلام | بداية | تالي | سابق | نهاية

Cost data including insurance, license fees, and depreciation are stored in the **VEHICLE_ANNUAL_ RUNNING_COSTS** table as follows:

Name	Data Type	Null
PERIOD_Y	NUMBER(4)	NOT
VEHICLE_NO	NUMBER(6)	NOT
LICENSING_DATE_D	NUMBER(2)	
LICENSING_DATE_M	NUMBER(2)	
LICENSING_DATE_Y	NUMBER(4)	
LICENSING_FEE	NUMBER(3)	
INSURANCE_VALUE	NUMBER(5)	
DEPRECIATION_VALUE	NUMBER(4)	
INTEREST_ON_CAPITAL	NUMBER(4)	

4.3 Official Working Hours Data Entry Form

نظام ادارة المشاغل المركزية
ساعات العمل الرسمية

ساعات يومية	العمل الرسمية	عدد الجمع خلال الشهر	عدد الأيام في الشهر	السنة	الشهر

خروج | اضافة | مسح | حفظ   استعلام | بداية | تالي | سابق | نهاية

The total number of days, the number of Fridays, the number of holidays and the average daily working hours for a month are defined in the **OFFICIAL_WORK_HRS** table as follows:

Name	Data Type	Null
WORK_DATE_M	NUMBER(2)	NOT
WORK_DATE_Y	NUMBER(4)	NOT
DAYS_IN_MONTH	NUMBER(2)	
FRIDAYS_IN_MONTH	NUMBER(1)	
OFFICIAL_HOLIDAYS	NUMBER(2)	
DAILY_HOURS	NUMBER(4,2)	

4.4 Actual Monthly Working Hours Data Entry Form

This form records both the total number of working hours and the actual number of hours worked in a month by a workshop employee in the **MONTHLY_SECTION_WORK_HRS** table as follows:

Name	Data Type	Null
WORK_DATE_M	NUMBER(2)	NOT
WORK_DATE_Y	NUMBER(4)	NOT
DEPARTMENT_CODE	NUMBER(2)	NOT
SECTION_CODE	NUMBER(2)	NOT
EMPLOYEE_NO	NUMBER(4)	NOT
TOTAL_CLOCKED_HRS	NUMBER(4,1)	
OFFICIAL_HOURS	NUMBER(5,2)	

4.5 Monthly Vehicle Cost Data Entry and Queries on Vehicle Costs Form

Information on mileage and the number of trips is updated monthly on the job card form. Information is stored in the **MONTHLY_VEHICLE_LOG** table as follows. When costs are incurred outside the workshop, they are recorded in the vehicle book and are added to this form.

Name	Data Type	Null
LOG_DATE_M	NUMBER(2)	NOT
LOG_DATE_Y	NUMBER(4)	NOT
LOG_BOOK_NO	NUMBER(5)	
VEHICLE_NO	NUMBER(6)	NOT
DRIVER_NAME	VARCHAR2(40)	
NO_OF_TRIPS	NUMBER(2)	
MILEAGE_START	NUMBER(6)	
MILEAGE_END	NUMBER(6)	
MILEAGE_OVERFLOW	NUMBER(6)	
FUEL_COST	NUMBER(10,4)	
PARTS_COST	NUMBER(8,3)	
TYRES_COST	NUMBER(8,3)	
OIL_COST	NUMBER(6,3)	
LUBS_COST	NUMBER(6,3)	
MAINTENANCE_COST	NUMBER(6,3)	
FUEL_CODE	NUMBER(2)	
OIL_CODE	NUMBER(2)	
LUBS_CODE	NUMBER(2)	
OIL_COST_COST	NUMBER(8,3)	
LUBS_COST_COST	NUMBER(8,3)	

4.6 Monthly Cost of All Vehicles Form

Monthly summary information on heavy machinery and other vehicles is recorded on this form in the **MONTHLY_PLANT_LOG** table.

Name	Data Type	Null
LOG_DATE_M	NUMBER(2)	NOT
LOG_DATE_Y	NUMBER(4)	NOT
LOG_BOOK_NO	NUMBER(5)	
PLANT_NO	NUMBER(6)	NOT
DRIVER_NAME	VARCHAR2(40)	
TOTAL_WORK_HRS	NUMBER(3)	
TOTAL_WAIT_HRS	NUMBER(3)	
TOTAL_REPAIR_HRS	NUMBER(3)	
FUEL_COST	NUMBER(10,4)	
OIL_COST	NUMBER(6,3)	
LUB_COST	NUMBER(6,3)	
TYRES_COST	NUMBER(6,3)	
LABOUR_COST	NUMBER(6,3)	
SPARE_COST	NUMBER(6,3)	
FUEL_CODE	NUMBER(1)	
OIL_CODE	NUMBER(1)	
LUBS_CODE	NUMBER(1)	
OIL_COST_COST	NUMBER(8,3)	
LUB_COST_COST	NUMBER(8,3)	

5. Reports

The following reports are currently generated by the system. (A printout of all of them is in Annex B). For reference purposes only the reports are labeled as orkshop **C**omputer **S**ystem-**R**eports and are numbered sequentially.

5.1 Actual Section Working Hours (WCS-R1)

- Header: month and year.
- Details: section description, number of employees, overhead, actual working hours, standard working hours, and productivity percentage.

5.2 Actual Directorate Working Hours (WCS-R2)

- Header: month and year.
- Details: directorate code and description, number of operations, item costs, labor cost and total costs.
- Footer: totals for all of the above.

5.3 Vehicles Currently Undergoing Repairs (WCS-R3)

The report lists all unfinished repairs in the period specified as follows:

- Header: "from" and "to" dates.
- Details: request number, request date, vehicle type, directorate description, vehicle plate number, repair description, and request type.

5.4 Vehicles Repaired (WCS-R4)

- Header: end date of repair.
- Details: vehicle plate number, vehicle type, directorate code, job card, entry date, repair code and description, and number of employee who did the work.

5.5 Monthly Section Cost (WCS-R5)

- Details: section description, number of operations, item costs, labor costs, sum of costs, actual and field working hours.

5.6 Employees' Monthly Production (WCS-R6)

The report details section overhead by month.

- Header: month, tear, directorate code, description, department code and description
- Details: section description, employee number, employee name, monthly salary, actual and official working hours.
- Footer: total monthly salaries, actual and official working hours.
- A chart is also included for monthly salaries, actual working hours, and official hours versus employees.

5.7 Employees Yearly Production (WCS-R7)

Annual section overhead is reported as follows:

- Header: year, directorate code, description, department code and description.
- Details: section description, employee number, employee name, actual annual working hours, official annual working hours, and monthly salary.
- Footer: totals for monthly salaries, actual and official working hours.

- A chart is also included for monthly salaries and actual and official working hours versus employees.

5.8 Monthly Vehicle Maintenance Costs (WCS-R8)

- Header: year, month, department code and description, vehicle type, vehicle price, vehicle plate number and model.
- Details: fuel cost, oil cost, spare parts cost, tires, labor costs, working hours, total cost.
- Footer: average cost per hour and average fuel cost per hour.

5.9 Annual Vehicle Maintenance Costs (WCS-R9)

- Header: year, department code and description, vehicle type, vehicle price, vehicle plate number and model.
- Details: month, fuel cost, oil cost, spare parts cost, tires, labor costs, working hours, total cost.
- Footer: annual cost for each vehicle and annual cost for all vehicles.

5.10 Monthly Vehicle Costs and Repairs (for all vehicles) (WCS-R10)

- Header: year and month.
- Details: driver's name, page number in the vehicle book, vehicle model, vehicle plate number, number of trips, beginning and ending odometer readings, total distance, liters of fuel, tires, oil cost, lubricant cost, labor costs, spare part costs, total cost and department description.

5.11 Vehicle Costs and Repairs by Month (WCS-R11)

- Header: year, month and vehicle plate number.
- Details: driver's name, page number in the vehicle book, vehicle model, number of trips, beginning and ending odometer readings, total distance, liters of fuel, tires, oil cost, lubricant cost, labor costs, spare part costs, total cost and department description.
- Footer: average fuel cost and maintenance value per kilometer and average fuel cost per kilometer.

CHAPTER 5
WORKSHOP COMPUTER FUNCTIONS AND RELATED DATABASE

Table 5.1 lists workshop system functions and programs.

Table 5.1
Workshop Computer System Functions

Function Area	Program Name
Directorate codes	DIRECTORATE_CODE_TABLE
Department codes	DEPARTMENT_CODE_TABLE
Section codes	SECTION_CODE_TABLE
Repair codes	REPAIR_CODE_TABLE
Fuel type codes	FUEL_TYPE_CODE_TABLE
Oil grade codes	OIL_GRADE_CODE_TABLE
Lubricant grade codes	LURICANT_GRADE_CODE_TABLE
General characteristics for sections	PLANT_CHAR
Engine characteristics	PLANT_ENGINE_CHAR
Starter characteristics	PLANT_STARTER_CHAR
Battery characteristics	PLANT_BATTERY_CHAR
Compressor characteristics	PLANT_COMPRESSOR_CHAR
Alternator characteristics	PLANT_ALTERNATOR_CHAR
Transmission characteristics	PLANT_TRANSMISSION_CHAR
Generator characteristics	PLANT_GENERATION_CHAR
Pump characteristics	PLANT_PUMP_CHAR
Employee information	EMPLOYEE_CHAR
Fixed Asset information	ASSET_CHAR
Vehicle characteristics	VEHICLE_CHAR
Request for vehicle repairs	CW_REPAIR_REQUESTS
Request for specialized repairs	SPECIALISED_REPAIR_REQUESTS
Job card information	CW_JOB_CARDS, CW_JOB_CARDS_OIL
Job card query	CW_JOB_CARDS_Q, CW_JOB_CARDS_OIL_Q
Section rates	SECTION_RATEST
Annual running cost for vehicles	VEHICLE_ANNUAL_RUNNING_COSTS
Standard official work hours	OFFICIAL_WORK_HRS
Actual monthly working hours	MONTHLY_SECTION_WORK_HRS
Monthly vehicle cost	FORM_MONTHLY_VEHICLE_LOG
Query on vehicle cost	MONTHLY_VEHICLE_LOG
Monthly cost for all vehicles	MONTHLY_PLANT_LOG

Table 5.2 summarizes the information contained in the workshop computer system.

Table 5.2
Data Description in the Workshop Computer System

Program Name	Basic Table(s)
DIRECTORATE_CODE_TABLE	DIRECTORATE_CODE_TABLE
DEPARTMENT_CODE_TABLE	DEPARTMENT_CODE_TABLE
SECTION_CODE_TABLE	SECTION_CODE_TABLE
REPAIR_CODE_TABLE	REPAIR_CODE_TABLE
FUEL_TYPE_CODE_TABLE	FUEL_TYPE_CODE_TABLE
OIL_GRADE_CODE_TABLE	OIL_GRADE_CODE_TABLE
LURICANT_GRADE_CODE_TABLE	LUBRICANT_GRADE_CODE_TABLE
PLANT_CHAR	PLANT_CHAR
PLANT_ENGINE_CHAR	PLANT_ENGINE_CHAR
PLANT_STARTER_CHAR	PLANT_STARTER_CHAR
PLANT_BATTERY_CHAR	PLANT_BATTERY_CHAR
PLANT_COMPRESSOR_CHAR	PLANT_COMPRESSOR_CHAR
PLANT_ALTERNATOR_CHAR	PLANT_ALTERNATOR_CHAR
PLANT_TRANSMISSION_CHAR	PLANT_TRANSMISSION_CHAR
PLANT_GENERATION_CHAR	PLANT_GENERATOR_CHAR
PLANT_PUMP_CHAR	PLANT_PUMP_CHAR
EMPLOYEE_CHAR	EMPLOYEE_CHAR
ASSET_CHAR	ASSET_CHAR
VEHICLE_CHAR	VEHICLE_CHAR
CW_REPAIR_REQUESTS	CW_REPAIR_REQUESTS
SPECIALISED_REPAIR_REQUESTS	SPECIALISED_REPAIR_REQUESTS
CW_JOB_CARDS	CW_JOB_CARDS, MONTHLY_PLANT_LOG, MONTHLY_SECTION_WORK_HRS, MONTHLY_VEHICLE_LOG
CW_JOB_CARDS_OIL	JOB_CARD_OIL_LUBS, CW_JOB_CARD_MATERIALS
CW_JOB_CARDS_Q	CW_JOB_CARDS
CW_JOB_CARDS_OIL_Q	JOB_CARD_OIL_LUBS, CW_JOB_CARD_MATERIALS
SECTION_RATEST	SECTION_RATES
VEHICLE_ANNUAL_RUNNING_COSTS	VEHICLE_ANNUAL_RUNNING_COSTS
OFFICIAL_WORK_HRS	OFFICIAL_WORK_HRS
MONTHLY_SECTION_WORK_HRS	MONTHLY_SECTION_WORK_HRS
FORM_MONTHLY_VEHICLE_LOG	MONTHLY_VEHICLE_LOG
MONTHLY_VEHICLE_LOG	MONTHLY_VEHICLE_LOG
MONTHLY_PLANT_LOG	MONTHLY_PLANT_LOG

Table 5.3 summarizes reports generated by the system.

Table 5.3
Reports of Workshop Computer System

Report Description	Report Name
Actual section working hours	REP_ANALYS_MANAGE
Actual directorate working hours	REP_DIRECTORATE_COST
Vehicles undergoing repairs	REP_CW_REPAIR_REQUESTS
Vehicles repaired	REP_CW_REPAIR_REQUESTS_END
Monthly section cost rates	REP_MONTHLY_SECTION_RATES
Employees' monthly production	M_EMPLOYEE_INFO
Employees' annual production	Y_EMPLOYEE_INFO
Monthly vehicle maintenance costs	MONTHLY_PLANT_CONSUMPTION
Annual vehicle maintenance costs	YEARLY_PLANT_CONSUMPTION
Monthly vehicle costs and repairs (for all vehicles)	REP_MONTHLY_VEHICLE_LOG_ALL
Vehicle costs and repairs by month	REP_MONTHLY_VEHICLE_LOG

Figures 5.1, 5.2, and 5.3 describe data flow in various aspects of the workshop.

Figure 5.1
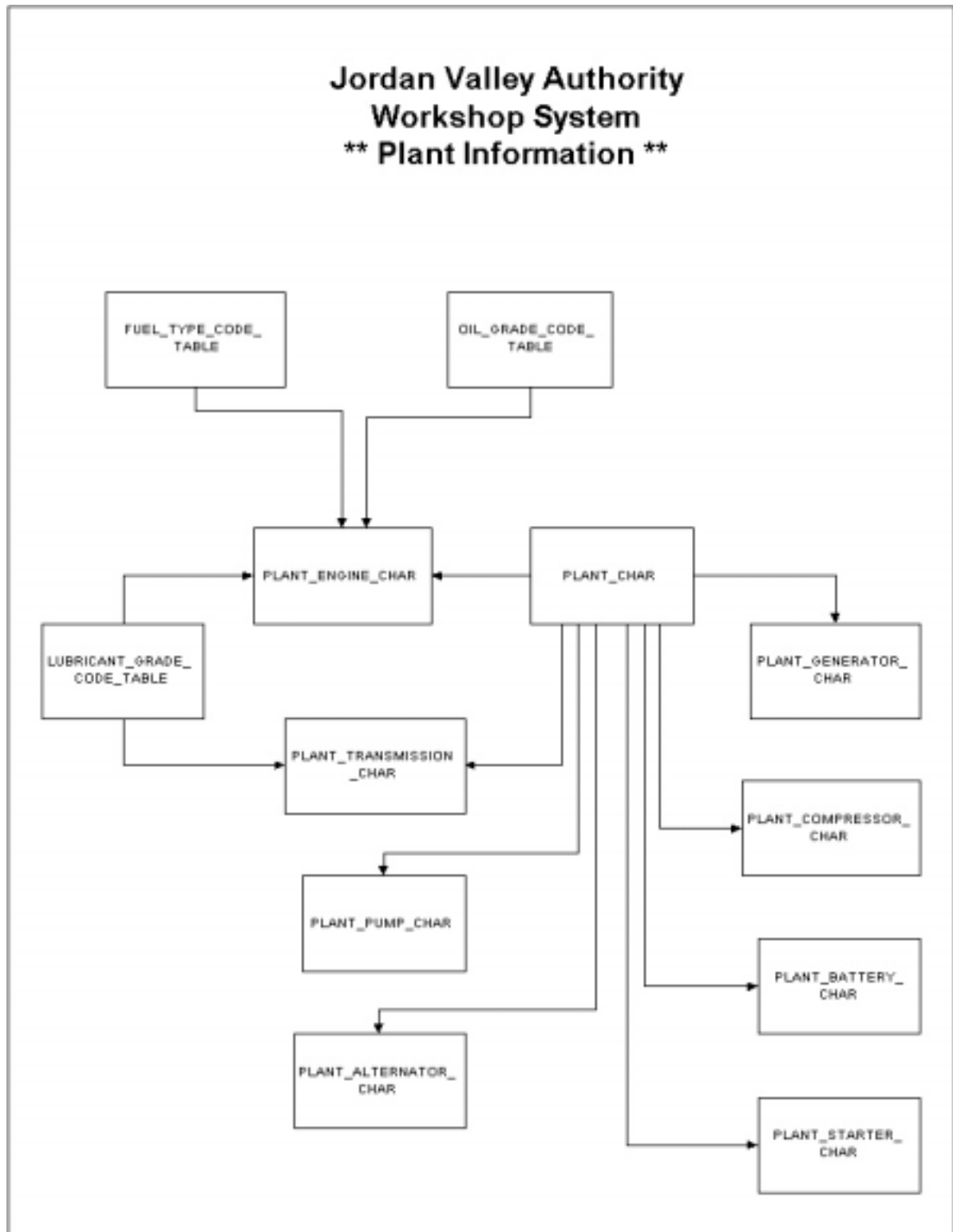**Workshop System Data Flow**
Plant Information

Jordan Valley Authority
Workshop System
** Plant Information **

Figure 5.2
Workshop System Data Flow
Job Cards and Repairs

Jordan Valley Authority
Workshop System
** Job Cards & Repairs **
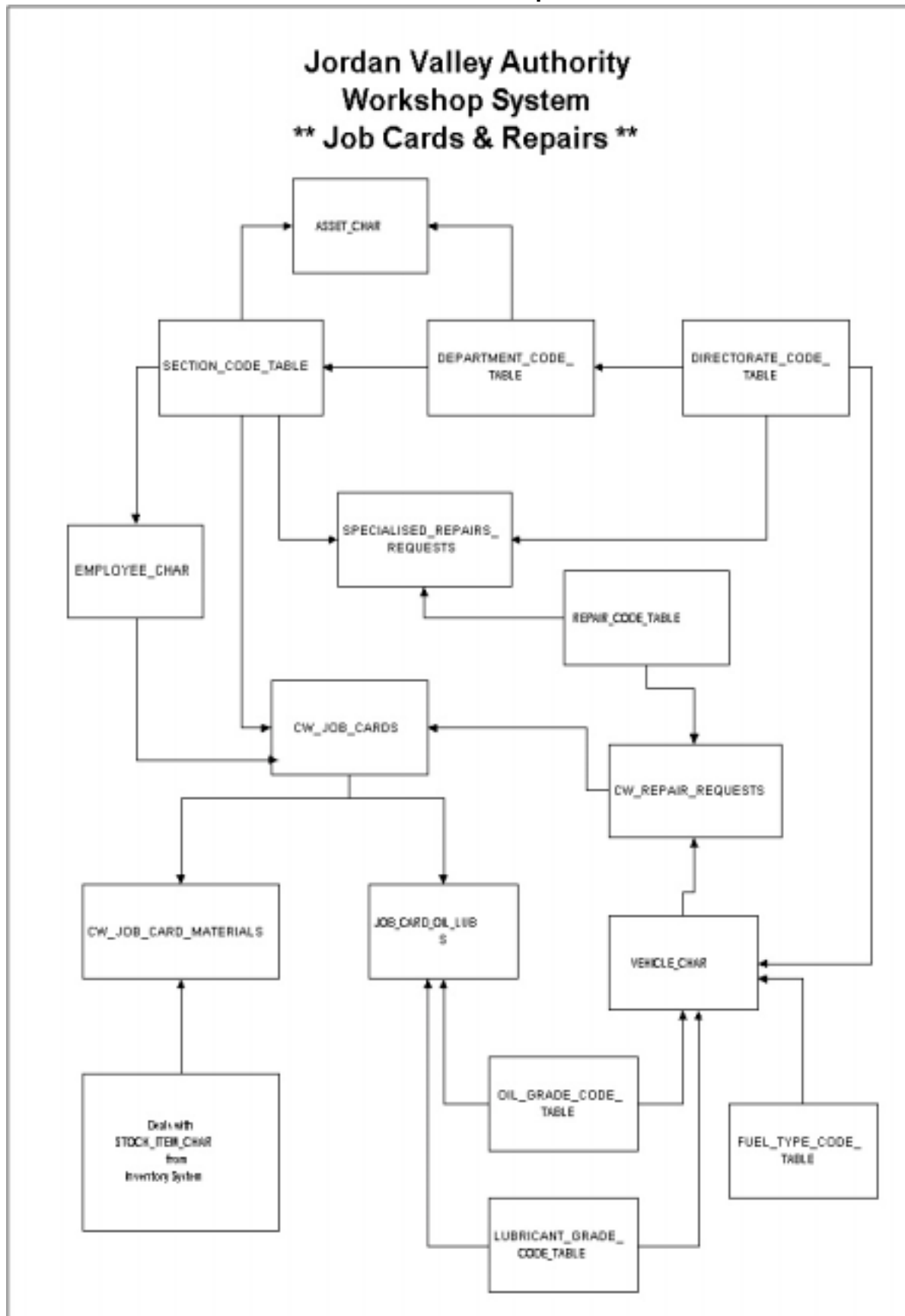
Figure 5.3
Workshop System Data Flow
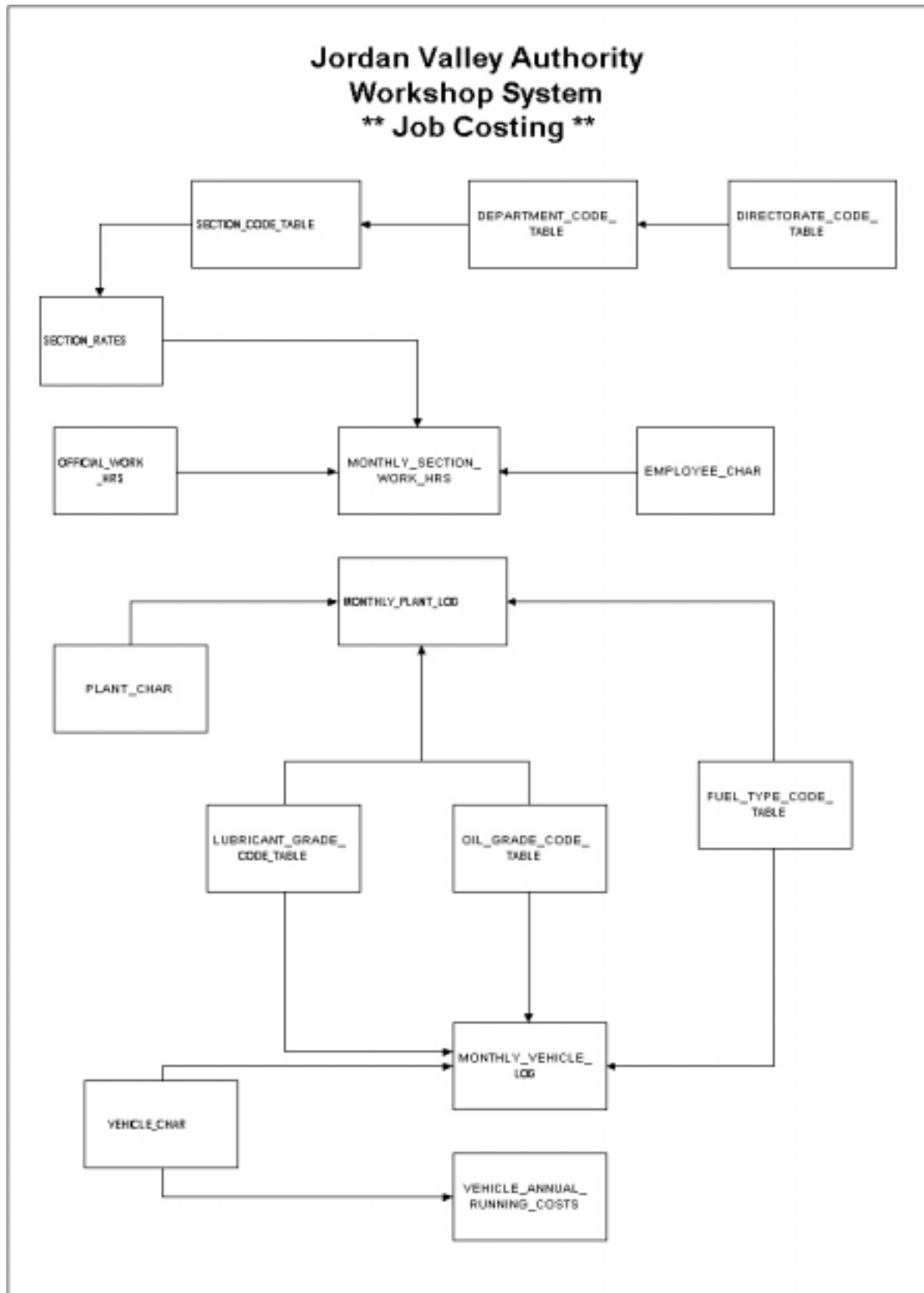**Job Costing**

Jordan Valley Authority
Workshop System
** Job Costing **

ANNEX A

The following is print out of **I**nventory **C**omputer **S**ystem **R**eports using reference numbers.

ANNEX B

The following is print out of **W**orkshop **C**omputer **S**ystem **R**eports using reference numbers